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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,231	04/29/2005	Yasuhito Yuasa	10873.168SUSWO	5067
52835 7590 09/14/2009 HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902				
EXAMINER				
BURNEY, RACHEL L				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
09/14/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/533,231

Applicant(s)

YUASA ET AL.

Examiner

Rachel L. Burney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 8-10, 12, 13, 15, 16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-10, 12, 13, 15, 16 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

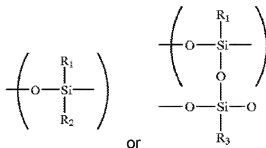
DETAILED ACTION

\Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-3, 12-13, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US PGPub 2003/0091923 (Kobayashi) in view of US PGPub 2002/0064724 (Nakamura) and US PGPub 2002/0076638 (Tamura).

Kobayashi discloses a two-component developer comprising a carrier and a polymer toner (PP 0018), wherein the carrier is a resin-coated carrier (PP 0025), wherein the coating resin may comprise a cross-linkable fluorine-modified silicone resin (PP 0030-0033), wherein the silicone resin may be coupled with an aminosilane coupling agent, which is present in an amount of about 23% by weight (PP 0100). The toner may comprise a polymer (binder), a colorant, and surface active agents (PP 0045), and a fixability improving agent (PP 0046), wherein the surface active agents may be present in an amount of 0.01 to 10% by weight (PP 0054). The developer may be 5% by weight of the toner and 95% by weight of the carrier (PP 0079). The fluorine-modified silicone resin may be obtained hydrolyzing a polyorganosiloxane having the formula:



wherein R₁, R₂, and R₃ may each be a hydrogen, a halogen, a hydroxyl group, a methoxy group, or an alkyl group with a perfluoroalkyl-containing organosilicone compound, having the formula CF₃CH₂CH₂Si(OCH₃)₃ (PP 0031-0033). Kobayashi fails to teach the ratio of the perfluoroalkyl-containing organosilicone compound to the polyorganosiloxane compound and the toner of the instant claims. Nakamura discloses that cure-type fluorine-modified silicone resins useful in carriers may comprise 15% of a trifluoropropyl group. Tamura discloses a toner comprising a binder resin, a colorant, a wax, and an external additive, wherein the toner has an endothermic curve from 105 to 150°C (PP 0021), wherein the endothermic curve of the toner correlates greatly with the wax in the toner (PP 0036). The wax may be a Fischer-Tropsch wax comprising a long-chain alkyl alcohol with a hydrocarbon wax (PP 0037), and may further be modified with a maleic anhydride (PP 0038), an unsaturated polycarboxylic anhydride. The toner comprises hydrophobic silica as an external additive (PP 0094) in an amount of 1.2 parts by weight to 100 parts by weight of the toner, wherein the silica has an average particle diameter of 25 nm (PP 0157). The wax has a peak molecular weight in the range of 3000-30,000 (PP 0046-0047). Tamura does not give the full molecular weight distribution (weight average, number average, and z-average) of the wax, but because it is a similar wax, made in a similar fashion (Fischer-Tropsch), and has a similar peak

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molecular weight, it would be reasonable to conclude that the other properties of the wax would also be similar. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the toner of Tamura in the developer of Kobayashi because it is a known toner used in developers, and is similar to the toner of Kobayashi, so therefore one of ordinary skill in the art would have a reasonable expectation of success in substituting the toners, and to use the ratio of the perfluoroalkyl-containing organosilicone compound to the polyorganosiloxane compound of Nakamura, 15%, in the fluorine-modified silicone resin of Kobayashi because Nakamura teaches that it is a known, workable ratio.

3. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US PGPub 2003/0091923 (Kobayashi) in view of 2002/0064724 (Nakamura) and US PGPub 2002/0076638 (Tamura) as applied to claim 1 above, and further in view of US Patent 6117607 (Shimizu).

Kobayashi, Nakamura, and Tamura disclose the toner of claim 1 as discussed above, but fail to teach the preparation of the toner. Shimizu discloses a toner comprising positively chargeable and negatively chargeable inorganic fine particles (column 2, lines 55-67), wherein the toner may be used in a two-component developer (column 1, lines 33-40). Shimizu teaches the inorganic fine powders may have a weight ratio of 50/50 to 10/90 of positively charged inorganic powders to negatively charged fine powders (column 3, lines 25-33) wherein the total makes about 1.3 wt% of the toner (table 2, column 14, lines 15-35) which would make the amounts of the individual

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inorganic powders substantially similar to those in the instant application. The inorganic powders are broken into multiple groups depending on size, the first group has an average size of 30-120nm and the second group is less than 20nm (column 3, lines 34-39). Shimizu does not discuss the ignition loss of the inorganic fine powders, but since it is a similar product in a similar embodiment, it is reasonable to conclude that the ignition losses would be substantially similar to that of the instant application. The multiple inorganic fine particles make it possible to substantially eliminate problems inherent in nonmagnetic development (column 2, lines 55-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the toner of Shimizu in the developer of Kobayashi and Tamura because it is a known toner used in developers, and is similar to the toner of Kobayashi and Tamura, so therefore one of ordinary skill in the art would have a reasonable expectation of success in substituting the toners.

4. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over US PGPub 2003/0091923 (Kobayashi) in view of 2002/0064724 (Nakamura) and US PGPub 2002/0076638 (Tamura) as applied to claim 1 above, and further in view of US Patent 6579653 (Yuasa).

Kobayashi, Nakamura, and Tamura disclose the toner of claim 1 as discussed above, but fail to teach the specific aminosilane coupling agent as described in the instant application. Yuasa discloses an aminosilane coupling agent may be γ -(2-aminoethyl) aminopropylmethyldimethoxysilane (column 26, lines 26-43). It would have

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been obvious to one of ordinary skill in the art at the time of the invention to use the aminosilane coupling agent of Yuasa as the aminosilane coupling agent of Kobayashi, Nakamura, and Tamura because it is a known aminosilane coupling agent and one would have a reasonable expectation of success in doing so.

Response to Arguments

5. Applicant's arguments, see pages 7-10, filed 07/15/2009, with respect to the rejection(s) of claim(s) 1, 4-5, 7, 12-13, and 15-16 under Kobayashi, Nakamura, and Yuasa have been fully considered and are persuasive in view of the amendments to the claims filed 07/15/2009 and the Request for Continued Examination, filed 08/05/2009. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made as discussed above.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel L. Burney whose telephone number is (571)272-9802. The examiner can normally be reached on Mon-Thurs: 7:30-6:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark F. Huff/
Supervisory Patent Examiner, Art Unit 1795

RLB